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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/814,552	03/22/2001	Henry H. Wheeler JR.	7014-101	4477

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Terri L. Sale, Esq.
FULBRIGHT & JAWORSKI L.L.P.
29th Floor
865 South Figueroa Street
Los Angeles, CA 90017-2576

EXAMINER

SERGEANT, RABON A

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/814,552

Applicant(s)

WHEELER ET AL.

Examiner

Rabon Sergent

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-17, 23-34 and 36-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-17, 23-34, and 36-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language, "commercially available", renders the claims indefinite, because it cannot be determined what definitive limitation is conveyed by the language. It is unclear what distinction is conveyed by "commercially available" or how a fiber that is not commercially available differs from one that is.

2. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Support has not been provided for specifying the aramid fiber as being sprayable. Furthermore, no definition has been provided to indicate what precisely is meant by the amended language.

3. Claims 15-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicants have claimed a spray nozzle for mixing and spraying; however, applicants have failed to provide a means within the nozzle for carrying out said mixing. According to the last line of page 12 of the specification, mixing occurs within a mixing block which is not part of the spray nozzle.

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4. Claims 15-17 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a nozzle having a tip diameter of 0.21 to 0.45 thousandths of an inch, does not reasonably provide enablement for nozzles having smaller tip diameters. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

Applicants have disclosed that the aforementioned feature is a characteristic of the nozzle and have failed to provide enablement for the use of smaller tip diameters.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-3, 5, 7, 10-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotschwar ('575).

Patentee discloses two-component sprayable polyurethane compositions, wherein a fiber reinforcing material is added to the polyol component, before the polyol component is mixed

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with the polyisocyanate component and ejected through a spray nozzle. Patentee additionally discloses quantities of fiber material and heating of the components. See abstract; column 2, lines 25+; column 7, lines 30+; column 8; and column 9, lines 61+. Furthermore, patentee discloses at column 9, lines 19-27 that structural fiber reinforced products may be produced by adding water to the composition so as to produce a foam, and further that the foam may be sandwiched between two layers of the fiber-reinforced material.

7. Though patentee discloses heating of the components, it is not clear that the components are heated prior to addition of the fiber; however, the position is taken that the point at which the components are heated prior to reaction amounts to an obvious process or design choice. Since heating the components would have had the effect of lowering their viscosities, one of ordinary skill would have been motivated to heat the components prior to adding the fibers, so as to facilitate their incorporation within the components.

The prior art rejection has been modified in response to applicants' arguments.

8. Claims 4, 6, 9, 13, 23-34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotschwar ('575), further in view of Cotts et al. ('569) and Brown ('969) and Domeier ('579).

As aforementioned, Kotschwar disclose sprayable polyurethane fiber reinforced compositions and their use in the production of reinforced structural laminates; however, patentee fails to teach such features as the prewetting of the fibers, the use of a 1:1 volumetric ratio, the mixing of the fibers into both the polyol and the polyisocyanate sides, and the coating of an existing reinforcement structure with a foamed reinforced composition, and the subsequent coating with a non-foamed fiber reinforced composition. Still, the position is taken that each of

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the aforementioned features constitutes an obvious modification of Kotschwar, well within the capabilities of the skilled artisan, especially when one considers the teachings of the secondary references, each drawn to incorporating fibrous reinforcements within polyurethanes.

Specifically, the prewetting of the fibers would have been obvious, as one would have expected the wetted fibers to be more compatible with the components. This position is supported by the teachings of Brown at column 2, lines 42+. Additionally, it would have been obvious to operate at a 1:1 volumetric ratio, because such a ratio would have simplified the delivery and metering of the components through the system. Also, the position is taken that it would have been obvious to incorporate the fibers into either or both sides of the composition, depending on preference; Brown (column 3, lines 8-10) and Domeier (column 9, lines 32-34) disclose that the fibers may be added to the polyol side, the polyisocyanate side, or both sides. Lastly, the disclosure of Kotschwar at column 9, lines 19-27 is considered to render applicants' coating of an existing structure with both a reinforced foam and a reinforced non-foamed material obvious. Despite applicants' arguments within the response, this disclosure clearly suggests to one of ordinary skill that reinforcement may be present in any layer of the composite, whether it is foamed or not.

9. Though Kotschwar discloses several suitable fiber materials, patentee is silent regarding the use of KEVLAR; however, the use of KEVLAR within polyurethanes to increase physical properties was known at the time of invention. This position is supported by the teachings of Cotts et al. (abstract) and Domeier (column 7, lines 26-41). As a result, the position is further taken that it would have been obvious to utilize KEVLAR as the fiber reinforcing material within Kotschwar, so as to arrive at the instant invention.

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10. Applicants' arguments have been considered; however, the position is maintained that the use of KEVLAR fiber within sprayable polyurethane compositions would have been *prima facie* obvious. The primary reference provides extensive guidance for the use of fiber materials within his composition and the secondary references exemplify that the use of KEVLAR yields beneficial properties when incorporated within a polyurethane. Therefore, when considered together, there exists ample motivation to incorporate KEVLAR within the compositions of Kotschwar. Applicants' arguments with respect to the sequence of heating the reactants and adding the fiber material have been addressed within paragraph 7.

11. Claims 37-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotschwar ('575) in view of Cotts et al. ('569) and Brown ('969) and Domeier ('579) as applied to claims 4, 6, 9, 13, 23-34, and 36 above, and further in view of Willibey et al. ('247) and White ('245).

While the teachings of Kotschwar in combination with Cotts et al. and Brown and Domeier are considered to render the incorporation of aramid fibers into polyurethane sprayable compositions and the use of the resulting sprayable compositions in the production of composites obvious, the references are silent regarding applications involving geotextile fabrics.

13. However, Willibey et al. disclose the application of polyurethanes to geotextiles at column 4, line 25; therefore, the position is taken that it would have been obvious to apply the fiber reinforced polyurethane of Kotschwar to the geotextile of Willibey et al., because one would have been motivated to enhance the structural properties of the geotextile by treating it with the reinforced polyurethane of Kotschwar. Furthermore, White discloses at column 1, lines 45+ and column 3, lines 62+ the adhesive bonding of geotextiles to substrates to produce liners for tanks, and White further stresses the need to provide a means for gas to escape from between

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the liner and the substrate walls as the tank is filled. Therefore, the position is further taken that it would have been obvious to utilize a structurally superior liner, such as that produced by coating the geotextiles of Willibey et al. with the fiber reinforced polyurethane of Kotschwar, in the production of tanks in accordance with the teachings of White and further to provide a means for the aforementioned gas to escape, such as by not sealing the perimeter of the geotextile with adhesive.

14. Applicants' response with respect to the obviousness of using reinforced coating compositions on geotextiles is not well taken. Given the types of applications disclosed by Willibey, (i.e.; retaining walls), one of ordinary skill would have been motivated utilize reinforced coatings with the geotextiles to bolster performance characteristics and to provide a degree of impermeability, where needed.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

R. Sergent
December 13, 2004


RABON SERGENT
PRIMARY EXAMINER